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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,727	12/21/2001	Chenghua Oliver Han	22.1450	9783

7590

10/09/2002

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EXAMINER

NELSON, PETER A

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 10/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No. \_\_\_\_\_

Applicant(s) \_\_\_\_\_

Examiner \_\_\_\_\_

Group Art Unit \_\_\_\_\_

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

### Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

\*Certified copies not received: \_\_\_\_\_

### Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 3641

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 6, 9, 10 and 12-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by either West German Patent to Rheinmetall.

4. Claims 7 and 15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rheinmetall '463.

5. Claims 8 and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rheinmetall '584.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Rheinmetall reference in view of Majerus et al.

The Rheinmetall references teach the machining of radial grooves of various shapes in a liner insert bowl including V-shaped and U-shaped. Majerus et al teach a circumferential groove in a shaped charge liner. It would be obvious to form the flutes of Rheinmetall circumferentially in the manner of Majerus et al if a sequential jet were desired therein.


8. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Pottier et al or Wesson in view of either Rheinmetall reference.

Art Unit: 3641

Pottier et al and Wesson teach a spiral and strip gun array of shaped charges on a perforating string within a wellbore. The Rheinmetall references teach shaped charge liners with pre-fragmentation points. It would be obvious to an artisan desiring to obtain a designated breakup and thus particular jet to the liners of the Pottier et al and Wesson arrays to pre-fragment the shaped charges therein in the manner of Rheinmetall.

9. Any inquiry concerning this communication should be directed to Examiner Nelson at telephone number (703) 306-4166.

Nelson/kl  
October 7, 2002

  
PETER A. NELSON  
PRIMARY EXAMINER  
PRIMARY EXAMINER